

TUBERCULOSIS OF THE BLADDER.

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(Concluded from page 408.)

PART III.

RESULTS.

IN 477 cases, results of treatment were given. In 44 of these the statements were so indefinite that they were rejected from the following list:

Deaths.....	161	Cured.....	29
Improved.....	130	Made worse.....	6
Not improved.....	77	(Indefinite).....	44

Deaths.—In the 161 deaths, there were 49 cases in which an operation of some kind had been performed; in 7 of these death was directly due to operative interference, in 42 it occurred at a remote period. The operations in the fatal cases were as follows: 28 suprapubic cystostomies, with curetting, cauterization with the Pacquelin cautery, excision of ulcer, etc.; 10 perineal sections; 5 nephrectomies; 3 prostatectomies; 2 nephrotomies; 1 vesico-vaginal incision. Of the 7 deaths which were due to operative interference (these are included in the above list) 3 followed a perineal section; 2 excision of the diseased area; 1 suprapubic cystostomy; in 1 the cause was not clearly stated. It is probable that there were more fatalities, but only those cases have been selected in which death occurred within the first few days after operation.

The cause of death in the great majority was not specifically stated; 4 patients died in coma; 2 from acute miliary tuberculosis; others from general tuberculosis, exhaustion, suppression of urine and other complications.

Improvement.—130 patients are said to have improved—

some only slightly, others markedly so, and a few were almost cured. Among the procedures employed were 48 suprapubic cystotomies; 23 iodoform injections; 18 sublimate instillations; 10 medical treatments; 5 curettings through the urethra in females; 5 perineal sections; 4 instillations of gemol; 3 vesico-vaginal incisions; 2 changes of climate; 2 excisions of the ulcer; 2 injections of tuberculin, 2 nephrectomies; 1 cauterization through the urethra in the male; 1 guaiacol injections, and 1 vesico-vaginal incision with suprapubic cystotomy.

The average age of the improved patients was 31.02 years.

No Improvement.—There were 77 cases in which in spite of treatment no benefit followed. Among the procedures employed were 34 suprapubic cystotomies; 15 instillations of sublimate; 10 curettings of the bladder through the urethra in females; 7 instillations of iodoform; 3 irrigations; 2 instillations of gemol; 2 perineal sections; 2 medical treatments; 1 excision of the ulcer; 1 suprapubic and perineal section combined. The average age of these patients was $27\frac{1}{3}$ years.

Cured.—There were 29 cases reported as cured. In these there were 9 suprapubic cystotomies with curetting, cauterization, iodoform drain, etc. (Bell, Guyon, Routier, Loumeau, Battle, and Carleton); 8 nephrectomies (Albarrañ, Koenig, Bougle, Kapsammer); 5 changes of climate (Bangs, Cunston, Camero, Desnos); 2 curettings of the bladder through the female urethra, (Polak, Motz); 2 sublimate instillations (Guyon); 1 iodoform injection (Jamin); 1 medical treatment (Richter); 1 nephrectomy with suprapubic cystotomy (Meyer).

Among the cured patients there were 13 males and 10 females; in 6 the sex was not given. The youngest was 11 and the oldest 49. The average age was 28.87 years.

In making up the foregoing list I have aimed to be as fair as possible, but I think I have leaned toward the inclusion of some cases which were doubtful.

A synopsis of a few of the excluded, doubtful, and specially interesting cases is as follows: Mullin's patient is referred to as cured, but at last accounts complained of consid-

erable frequency of urination during the day, which would argue that there must still have been some bladder irritation. It is presumable, therefore, that the disease was still mildly active.

Strauss' case is not one of undoubted tuberculous, for at no time were tubercle bacilli found in the urine, and the ulcer in the bladder was single and situated on the anterior wall. (Not included.)

Griefenhagen reported a cure after perineal section, but in his last record he says that both cords were still thickened. Such being the case, doubt is thrown on the complete recovery of the bladder. (Not included.)

Clado recorded a cured bladder tuberculosis. The diagnosis was made, however, only on the appearance of the granulations in the bladder at the time of operation. This case is included but is not absolutely positive.

Polak's patient had tubercle bacilli in the urine and the cystoscopic examination showed a tuberculous mucous membrane. This, then, I take to be an undoubted instance of cured bladder tuberculosis.

The tuberculosis in Bangs' record is unquestionable. A perineal section and suprapubic cystotomy were both employed without improvement, after which the patient went to California and was apparently cured.

Cumston gives the clearest and most undoubted example of the list. A girl aged 11 had tubercle bacilli in the urine proved by the microscope and by inoculation into a guinea-pig; there were also typical tuberculous lesions in the bladder which were carefully observed through the cystoscope. She was treated with local applications of lactic acid once a week, and iodoform oil was injected every fourth day. This was kept up for four months, when she was sent to Bermuda and remained there for several months; on her return the bladder was again cystoscoped and the lesions were found to have healed; no tubercle bacilli could be discovered in the urine and inoculation of a guinea-pig proved negative.

Carleton's report, which is included in the above list under

the head of suprapubic cystotomies, is as follows: Male, 39, had had several attacks of hæmaturia; later, frequent and painful micturition developed, and tubercle bacilli were found in the urine. A suprapubic cystotomy was done, a large stone was found and definite tubercles were seen on the mucous membrane. After the operation the patient rapidly improved and the tubercle bacilli disappeared. While it is stated that the organisms were found in the urine, and that definite tubercles were present on the mucous membrane, the bacilli were not differentiated from smegma bacilli and the tissue was not proved to be tuberculous by microscopic examination. Then, too, the symptoms cleared up so rapidly that, taken altogether, there must remain some doubt about this case.

The report of McGrath was not included. In this instance there were no tubercle bacilli in the urine, nor was any tissue of the bladder removed and examined, the diagnosis being made simply on the appearance of the mucous membrane at the time of operation. The bladder was drained for six weeks, and at the end of ten months the urine was clear and the other symptoms had disappeared.

Cotterel's case has been referred to in the literature as an instance of cure. No tubercle bacilli were found in the urine, and there was no tuberculosis, as far as could be made out, in the other genito-urinary organs. The bladder showed a small ragged ulcer just above the right ureter, but otherwise there were no characteristic signs. The mucous membrane was curetted and touched with the Paequelin cautery; the wound healed readily and the patient became entirely well. (Not included.)

Reynès case is reported as an example of recovery. The author states that the patient was very much improved, but does not say that he was well. (Not included.)

Battle had an undoubted instance which was cured after operation. The patient, a female aged 11, had had various forms of treatment without benefit. A suprapubic cystotomy was done and the bladder was curetted and cauterized with chloride of zinc. She made a slow, but apparently complete

recovery, for at last accounts her health was good; she had no bladder symptoms, and was able to hold her urine for three hours. The tuberculous nature of this case was proved by the examination.

McGowan reports 10 suprapubic cystotomies for tuberculosis of the bladder with 4 cures. The cases said to be cured were never definitely proved to be tuberculous. (Not included.)

Botsford cites an instance of a cure by hypodermic injections of nuclein. (Not included.)

Richter is said to have cured a bladder tuberculosis in a girl by the use of ichthyol administered internally. (Not included.)

Guyon had only 1 suprapubic cystotomy case that was practically well afterwards. (Included.)

Horwitz has seen 2 cases of bladder tuberculosis subside spontaneously. (Not included.)

Personally I have not observed in my practice, nor has there been in the general surgical wards of the Johns Hopkins Hospital a single instance of complete recovery from bladder tuberculosis.

Made Worse.—There were 9 cases recorded as being made worse: 3 from sublimate instillations; 2 from injections of tuberculin; 3 from perineal sections; 1 from injections of guaiacol; and 1 from injections of iodoform. After the instillation of sublimate, in one of the above, there was great increase in the frequency of urination and a rapid implication of the prostate. The average age of the patients who were made worse by treatment was thirty-four years.

Excision of the Diseased Area.—There were 13 instances in which the diseased mucous membrane was excised through a suprapubic opening; 2 of these patients died from the effects of operation; 8 died at a later period; 2 were improved; and 1 was unimproved.

The bladder was completely excised with transplantation of the ureters into the rectum, twice; both patients died some time after.

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